

What is claimed is:

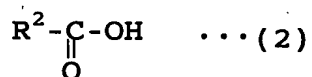
1. A composition for forming a coating film, which comprises a reaction product of a tantalum alkoxide and at least one compound selected from the group consisting of
 5 carbamic acid, carboxylic acid and carboxylic anhydride and a solvent and which is used to form a tantalum oxide film.

2. The composition for forming a coating film of claim 1, wherein the tantalum alkoxide is represented by the following
 10 formula (1):



wherein R^1 is an alkyl group having 1 to 6 carbon atoms, with the proviso that five R^1 's may be the same or different.

15 3. The composition for forming a coating film of claim 1, wherein the carboxylic acid is represented by the following formula (2):

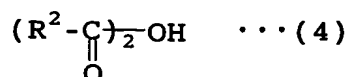


wherein R^2 is an alkyl group having 1 to 6 carbon atoms or
 20 haloalkyl group having 1 to 6 carbon atoms, or the following formula (3):

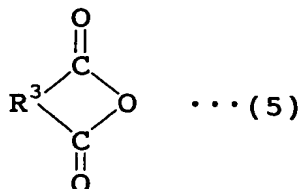


wherein R^3 is a single bond, methylene group, halomethylene group, alkylene group having 2 to 6 carbon atoms, haloalkylene
 25 group having 2 to 6 carbon atoms, alkenylene group having 2 to 6 carbon atoms or haloalkenylene group having 2 to 6 carbon atoms.

4. The composition for forming a coating film of claim 1,
 30 wherein the carboxylic anhydride is represented by the following formula (4):



wherein R^2 is as defined in the above formula (2),
or the following formula (5):



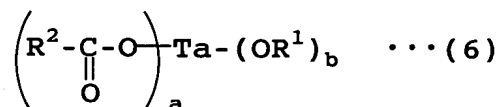
wherein R^3 is as defined in the above formula (3).

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5. The composition for forming a coating film of claim 3,
wherein the carboxylic acid is maleic acid or citraconic acid.

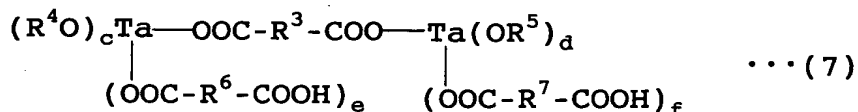
6. The composition for forming a coating film of claim 4,
10 wherein the carboxylic anhydride is maleic anhydride or
citraconic anhydride.

7. The composition for forming a coating film of claim 1,
wherein the reaction product is at least one selected from
15 the group consisting of a compound represented by the
following formula (6):



wherein R^1 is as defined in the above formula (1), R^2 is as
defined in the above formula (2) or amino group, "a" is an
20 integer of 1 to 5, and "b" is an integer of 0 to 4, with the
proviso that $a + b = 5$,

and a compound represented by the following formula (7):



wherein R^3 , R^6 and R^7 are each independently a single bond,
25 methylene group, halomethylene group, alkylene group having
2 to 6 carbon atoms, haloalkylene group having 2 to 6 carbon
atoms, alkenylene group having 2 to 6 carbon atoms or

haloalkenylene group having 2 to 6 carbon atoms, R^4 and R^5 are each independently an alkyl group having 1 to 6 carbon atoms, "c" and "e" are each an integer of 0 to 4, with the proviso that $c + e = 4$, and "d" and "f" are each an integer of 0 to 4, with the proviso that $d + f = 4$.

8. A method of preparing the composition for forming a coating film of claim 1, comprising the steps of:

- (1) reacting a tantalum alkoxide with at least one compound selected from the group consisting of carbamic acid, carboxylic acid and carboxylic anhydride in the presence of a solvent as required; and
- (2) adding a solvent to the obtained reaction product as required so as to prepare a composition for forming a coating film, containing the solvent.

9. A method of forming a tantalum oxide film, comprising the steps of:

- (1) forming a coating film of the composition for forming a coating film of claim 1 on a substrate; and
- (2) thermally and/or optically treating the coating film.

10. A tantalum oxide film formed from the composition for forming a coating film of claim 1.

11. A tantalum oxide film formed by the method of claim 9.